City of Lafayette Staff Report

For: City Council

From: Ron Lefler, Public Works Services Manager
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Meeting Date: June 9, 2008

Subject: **Water Rationing by EBMUD & Drought Response**

Background

After several years of less than normal rainfall East Bay Municipal Water District has declared mandatory water rationing. The District's goal is an overall reduction of 15% in water use. Customers will be subject to a surcharge for any water use in excess of 50% of their specified goal. Some of the key provisions of the mandatory rationing affecting City operations, especially landscape and park maintenance are as follows:

- Effective date of rationing: Immediate
- District public hearing for drought water rates: July 8, 2008
- Drought rates effective: August 1, 2008
- "Control Period" for computing 3-years prior use: July 2004 through June 2007
- Water Use Reduction Goals:
  - City buildings (institutional rate): 9%
  - City landscape on separate meters: 30%
  - Water surcharge for not meeting goals: $2.00 / HCF ($2.67 /1,000 gallons)
- Applies to City buildings when 90% of the control period average consumption for the corresponding billing cycle is exceeded.
- Applies to landscape irrigation when 85% of the control period average consumption for the corresponding billing cycle is exceeded.

At this time, there will be no credit for any conservation that may have been accomplished during the "Control Period". During this period, the City's combined irrigation water use for Public Works and Parks decreased by just over 8%.

Drought Response

Given the lack of rainfall earlier this year and EBMUD's fore-shadowing for possible water rationing this summer, Public Works started planning for possible water rationing several months ago.

Public Works has already implemented a 15% reduction by simply programming our central smart irrigation controller (computer) to reduce watering times by 15% based on last year's water schedule.

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For the few small landscape areas not connected to the central smart irrigation controller the reduction will be set in the field. Given the recent cooling trend, this reduction should not have a permanent detrimental impact on the landscape. As temperatures rise, our central irrigation controller (computer) will automatically increase watering times based on predetermined parameters.

Using flow rates reported by the flow meters now in place at all major landscaped areas, MCE and staff will monitor weekly consumption for comparison to the control period (July 2004 thru June 2007) and make adjustments as needed to maintain a minimum reduction of 15%. For landscape areas, the City would avoid any rate surcharge (penalty) provided we reduced consumption by 15%. Field observation and system checking will be increased to reduce possible irrigation problems, breaks, water waste and landscape distress. Watering times will be reduced further in an effort to achieve a 30% reduction, if it can be accomplished without sacrificing landscaping.

A list of measures previously taken, and equipment acquired that will help us meet our water reduction goals, is at the end of this report. Additional measures will be taken in the immediate future, or as soon as can implemented, to further our water conservation efforts. Should it become necessary to take additional steps to meet our goals or in the event the drought should extend into 2009, we have included additional measure that may be necessary to consider. The list is not all encompassing, and we welcome additional ideas and suggestions.

Budget Impact

We plan to implement the additional drought response measures, as outlined on the following list of "Water Conservation Measures", without increasing the 08/09 budget request. This will be accomplished by a slight reduction in the level of service in routine landscape maintenance.

Implementation of the additional measures, as outlined on the following list of "Water Conservation Measures", would require additional funding. The cost and merits of these measures will be evaluated and addressed in the near future in order to be prepared in the event additional measures become necessary.

Should we fail to meet a minimum 15% reduction, the budget for water would need to be increased by an estimated 7% to 15% ($6,000 to $14,000)

Public Works Services and Parks, Trails & Recreation
Water Conservation Measures

A. Implemented or Practiced

Equipment in Use

- Central Smart Controller
- Flow Meters on all systems with Smart Controller
- Weather Station

Maintenance

- Program controllers for automatic shutoff
- Watering between 10:00 PM and 6:00 AM
- Multiple irrigation start times
- Ongoing monitoring of irrigation system
- Immediate response to water breaks
- Ongoing monitoring landscape for drought stress, hand water as needed
- Loosen/aerate compacted soils to improve permeability
- Add organics to bedding to minimize evaporation, where possible
- Replace bubblers with drip irrigation where beneficial and practical
- Independent irrigation controller schedule monitoring & recommendations
- Maintain turf height at 2-1/2 to 3 inches

B. To Be Implemented

- EBMUD water audit
- Install automatic shut-off devices for systems not connected to Central Smart Controller, where feasible
- No plant fertilization, except during rainy season
- Cover drip and bubbler irrigation with mulch/chips
- Cap/eliminate irrigation to trees & large shrubs where possible
- Provide deep-root hand watering as needed for shrubs & trees
- All MCE field crews to have moisture gages to monitor moisture on an ongoing basis
- Weekly meetings with MCE to review water conservation progress

C. Additional Measures to Consider Should the Drought Continue into 2009 or to meet 15% Reduction

- Allow Bermuda grass at Buckeye Fields to go dormant
- Replace Community Park Ballfields turf with Bermuda grass sod
- Eliminate planting in narrow median strips
- Add moisture sensors to controllers where beneficial
- Purchase tank for dump truck for purpose of importing water and hand watering
- Remote monitoring of smart controller from home to respond to warnings and make program changes as necessary
- Defer the installation of any additional landscaping till after water rationing has ended